

Sub G6
24. (New) A method according to Claim 23 wherein processing of said lignocellulose-containing material comprises at least one of the following: prehydrolysis of said lignocellulose-containing material, steam explosion of said lignocellulose-containing material, enzymatic hydrolysis of said lignocellulose-containing material with enzymes having a cellulolytic and xylanolytic activity to hydrolyze said lignocellulose-containing material, acid hydrolysis of said lignocellulose-containing material, pretreatment of said lignocellulose-containing material, chromatographic separation, ion-exchange purification, precipitation, partial hydrolysis of said lignocellulose-containing material, and extraction of said lignocellulose-containing material.

CRF Sub I
F,
25. (New) A method according to Claim 23 including removing solids comprising lignin from said solution.

Sub G7
26. (New) A method according to Claim 23 wherein said yeast is selected from the group consisting of genera *Candida tropicalis*, *Candida tropicalis* strain having an accession number ATCC 9968, and *Debaryomyces hansenii*.

Sub I
27. (New) A method according to Claim 23 wherein fermenting occurs at a temperature ranging from about 10 to about 45 degrees C at a pH ranging from 4 to 7 with a yeast concentration of about 1 to about 20 g of dry yeast per liter of solution having a xylose content of about 50 to about 300 g/l for about 24 to about 72 hours in the presence of nutrients.

28. (New) A method according to Claim 23 wherein said crystallization is selected from the group consisting of cooling crystallization and evaporation crystallization.

29. (New) A method according to Claim 23 wherein said xylitol crystals are separated by centrifugation and washed with water to produce substantially pure crystalline xylitol.

Sub G8

30. (New) A method according to Claim 23 wherein:
said hexose in said xylose-rich solution further comprises arabinose; and said
arabinose is reduced to arabinitol during said fermentation.

cont F₁

31. (New) A method according to Claim 23 wherein:
said processing comprises
partially hydrolyzing said lignocellulose-containing material;
separating said partially hydrolyzed lignocellulose-containing
material into an extracted biomass comprising hexosans and hexoses and a
prehydrolyzate comprising free xylose;
hydrolyzing said extracted biomass to produce an hydrolyzate
comprising hexose;
said fermenting comprises
fermenting said hydrolyzate to produce a fermented solution
comprising ethanol; and
fermenting said prehydrolyzate to produce a fermented solution
comprising xylitol.

Add G9

REMARKS

If the Examiner has any questions concerning the application or preliminary amendment, a telephone call to Applicants' attorney would be appreciated.

Also, in accordance with 37 C.F.R. § 1.121, attached hereto is a marked-up version showing the changes made by the present amendment.

Respectfully submitted,

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VERSION WITH MARKINGS TO SHOW CHANGES MADE

In the Claims

New claims 23-31 have been added:

23. (New) A method of processing lignocellulose-containing material comprising xylose and hexose from a xylan-containing matter selected from the group consisting of: wood, softwood, hardwood as birch, beech, poplar and alder, plants, plant constituents as grain straw and grain hulls as wheat, corn, oat and barley, corn cobs, corn stems, nutshells, bagasse, cottonseed bran, wood chips, sawdust, woodpulp, spent sulphite liquor, spent liquor from paper processing, spent liquor from woodpulp processing, sulphite cooking liquor, and liquids derived from any of the preceding, comprising:

processing said lignocellulose-containing material to produce a xylose-rich solution comprising free xylose and hexose;

fermenting said xylose-rich solution to produce a fermented solution with a yeast selected from the group consisting of a yeast of the genera *Candida*, *Pichia*, *Pachysolen*, and *Debaryomyces*, said fermenting comprising reducing said free xylose to xylitol and reducing said hexose to ethanol, and said fermented solution comprising xylitol, ethanol, and spent yeast;

separating a substantial portion of said spent yeast from said fermented solution to produce a substantially clarified solution comprising ethanol and xylitol, said clarified solution comprising substantially less spent yeast by weight on a dry solids (substance) basis than said spent yeast in said fermented solution, and said separating comprising at least one separating method selected from group consisting of clarification by e.g. filtration, centrifugation and decanting;

distilling said clarified solution to produce distilled ethanol and xylitol distillate, said distilled ethanol comprising a greater concentration of ethanol by weight on a

liquid basis than said ethanol in said clarified solution, and said xylitol distillate comprising a greater concentration of xylitol by weight on a dry solids basis than said clarified solution;

fractionating said xylitol distillate by chromatographic separation to produce a xylitol fraction and a residue fraction, said xylitol fraction comprising a greater concentration of xylitol by weight on a dry solids basis than said xylitol in said xylitol distillate; and

crystallizing said xylitol fraction to produce xylitol crystals.

24. (New) A method according to Claim 23 wherein processing of said lignocellulose-containing material comprises at least one of the following: prehydrolysis of said lignocellulose-containing material, steam explosion of said lignocellulose-containing material, enzymatic hydrolysis of said lignocellulose-containing material with enzymes having a cellulolytic and xylanolytic activity to hydrolyze said lignocellulose-containing material, acid hydrolysis of said lignocellulose-containing material, pretreatment of said lignocellulose-containing material, chromatographic separation, ion-exchange purification, precipitation, partial hydrolysis of said lignocellulose-containing material, and extraction of said lignocellulose-containing material.

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said processing comprises
partially hydrolyzing said lignocellulose-containing material;
separating said partially hydrolyzed lignocellulose-containing material into an extracted biomass comprising hexosans and hexoses and a prehydrolyzate comprising free xylose;
hydrolyzing said extracted biomass to produce an hydrolyzate comprising hexose;
said fermenting comprises

fermenting said hydrolyzate to produce a fermented solution
comprising ethanol; and

fermenting said prehydrolyzate to produce a fermented solution
comprising xylitol.